

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-38 (Canceled).

39. (Previously Presented):

An access device comprising:

a text-based interface layer to a combined text-based interface generator and hypertext transport protocol (HTTP) client;

an HTTP server interface layer to a combined HTTP server and simple network management protocol (SNMP) manager; and

an SNMP agent interface layer to a SNMP agent, wherein the SNMP agent generates a user interface and receives user input that specifies a change to configuration data stored in said access device and said SNMP agent transmits a first message to the combined hypertext transport protocol (HTTP) server and SNMP manager using HTTP;

the combined HTTP server and SNMP manager, wherein the combined HTTP server and SNMP manager only accesses said configuration data by communicating with said SNMP agent and wherein in response to said first message, said combined HTTP server and SNMP manager transmits a second message to the combined text-interface generator and HTTP client using SNMP; and

the combined text-interface generator and HTTP client, wherein the combined text-interface generator and HTTP client only accesses said configuration data in response to said second message as specified by said user input by requesting said combined HTTP server and SNMP manager to communicate with said SNMP agent, so that all safety mechanisms are built into the SNMP agent to enhance security and wherein said text-based interface layer, said HTTP server interface layer and said SNMP agent interface layer reside in the access device.

40. (Previously Presented):

The access device of claim 39, wherein:

the combined HTTP server and SNMP manager generates hypertext mark-up language (HTML) documents that include anchors that contain identifiers for management information base (MIB) objects; and

the combined text-interface generator and HTTP client transmits to the combined HTTP server and SNMP manager messages that contain identifiers for MIB objects in response to input received from a user.

41-49 (Canceled).

50. (Previously Presented):

A network device comprising:

means for providing a text-based interface to a combined text-based interface generator and hypertext transport protocol (HTTP) client;

means for providing an HTTP server interface to a combined HTTP server and simple network management protocol (SNMP) manager; and

means for providing an SNMP agent interface layer to a [[(]]SNMP[(]] agent[[],]] to receive user input that specifies a change to configuration data stored in said network device and said SNMP agent to transmit a first message to a means for combining hypertext transport protocol (HTTP) server and SNMP manager using HTTP;

said means for combining HTTP server and SNMP manager, wherein the means for combining HTTP server and SNMP manager only accesses said configuration data by communicating with said SNMP agent and wherein in response to said first message, said means for combining HTTP server and SNMP manager to transmit a second message to a means for combining text-interface generator and HTTP client using SNMP; and

said means for combining text-interface generator and HTTP client, wherein the means for combining text-interface generator and HTTP client to only access said configuration data in response to said second message as specified by said user input by requesting the means for combining HTTP server and SNMP manager to communicate with said SNMP agent, so that all safety mechanisms are built into the SNMP agent to enhance security and wherein said means for providing said text-based interface layer, said HTTP server interface and said SNMP agent interface reside[[s]] in said network device.

51. (Previously Presented):

The network device of claim 50, wherein:

the means for combining HTTP server and SNMP manager generates hypertext mark-up language (HTML) documents that include anchors that contain identifiers for management information base (MIB) objects; and

the means for combining text-interface generator and HTTP client transmits to the means for combining HTTP server and SNMP manager messages that contain identifiers for MIB objects in response to input received from a user.

52. (Previously Presented):

The network device of claim 50, further comprising a user interface, said interface being optimized for speed and navigability.

53. (Previously Presented):

The network device of claim 52, wherein the user interface is a duplicate in look-and-feel of a text menu system.

54-62 (Canceled).

63. (Previously Presented):

A computer readable medium containing executable instructions which, when executed in a processing system, causes the system to perform the following comprising:

provide a text-based interface layer to a combined text-based interface generator and hypertext transport protocol (HTTP) client;

provide an HTTP server interface layer to a combined HTTP server and simple network management protocol (SNMP) manager; and

provide an SNMP agent interface layer to [[(]]SNMP[[()]] agent, wherein the SNMP agent is configured to generate user input that specifies a change to configuration data stored in said access device and said SNMP agent is configured to transmit a first message to a combined hypertext transport protocol (HTTP) server and SNMP manager using HTTP; provide a combined HTTP server and SNMP manager, wherein the combined HTTP server and SNMP manager is configured to only access said configuration data by communicating with said SNMP agent and wherein in response to said first message, the combined HTTP server and SNMP manager is configured to transmit a second message to a combined text-interface generator and HTTP client using SNMP; and provide a combined text-interface generator and HTTP client, wherein the combined text-interface generator and HTTP client is configured to only access said configuration data in response to said second message as specified by said user input by requesting said combined HTTP server and SNMP manager to communicate with said SNMP agent, so that all safety mechanisms are built into the SNMP agent to enhance security and wherein said a text-based interface layer, said HTTP server interface layer and said SNMP agent interface layer reside in said computer readable medium.

64. (Previously Presented):

The computer readable medium of claim 63 wherein:

the combined HTTP server and SNMP manager generates hypertext mark-up language (HTML) documents that include anchors that contain identifiers for management information base (MIB) objects; and

the combined text-interface generator and HTTP client transmits to the combined HTTP server and SNMP manager messages that contain identifiers for MIB objects in response to input received from a user.

65. (Previously Presented):

The computer readable medium of claim 63, wherein the method further comprises providing a user interface, said interface being optimized for speed and navigability.

66. (Previously Presented):

The computer readable medium of claim 65, wherein the user interface is a duplicate in look-and-feel of a text menu system.

67. (Previously Presented):

The access device of claim 39, wherein the text-based interface layer does not provide direct access to the configuration data.

68. (Previously Presented):

An apparatus, comprising:

one or more access devices, each of the one or more access devices comprising:

a text-based interface layer to a combined text-based interface generator and
hypertext transport protocol (HTTP) client;

an HTTP server interface layer to a combined HTTP server and simple network
management protocol (SNMP) manager;

a SNMP agent interface layer to a SNMP agent; and agent, wherein the SNMP agent generates a user interface and receives user input that specifies a change to configuration data stored in said one or more access devices, the SNMP agent is the only module configured to directly access the configuration data, and the SNMP agent transmits a first message to the combined hypertext transport protocol (HTTP) server and SNMP manager using HTTP;

configuration data, wherein the SNMP agent is the only module configured to directly access the configuration data stored in the one or more access devices.

the combined HTTP server and SNMP manager, wherein the combined HTTP server and SNMP manager only accesses said configuration data by communicating with said SNMP agent and wherein in response to said first message, said combined HTTP server and SNMP manager transmits a second message to the combined text-interface generator and HTTP client using SNMP; and

the combined text-interface generator and HTTP client, wherein the combined text-interface generator and HTTP client only accesses said configuration data in response to said second message as specified by said user input by requesting said combined HTTP server and SNMP manager to communicate with said SNMP agent, so that all safety mechanisms are built into the SNMP agent to enhance security and wherein said text-based interface layer, said HTTP server interface layer and said SNMP agent interface layer reside in the access device.

69. (Previously Presented):

The apparatus of claim 68, wherein the SNMP manager resides within a different access device of the one or more access devices than the SNMP agent and the configuration data.

70. (Previously Presented):

The apparatus of claim 68, wherein the SNMP manager resides within a same access device of the one or more access devices as the SNMP agent and the configuration data.

71. (Previously Presented):

A network device having one or more processing devices to implement code which when executed cause the one or more processors to perform the following comprising:

executing a first software layer to generate a user ~~interface;~~ interface, wherein said first software layer is a text-based interface layer to a combined text-based interface generator and hypertext transport protocol (HTTP) client;

said first software layer receiving user input that specifies a change to configuration data stored in said network device;

in response to said user input, said first software layer transmitting a first message to a second software layer using Hypertext Transport Protocol, wherein said second software layer is an HTTP server interface layer to a combined HTTP server and simple network management protocol (SNMP) manager and resides in said network device;

in response to said first message, said second software layer transmitting a second message to a third software layer using Simple Network Management Protocol, wherein

said third software layer is an SNMP agent interface layer and resides in said network device; and

in response to said second message, said third software layer changing said configuration data as specified by said user input.

71. (Currently Amended):

A network device having one or more processing devices to implement code which when executed cause the one or more processors to perform the following comprising:

causing a second software layer to send a Hypertext Markup Language document to a first software layer;

executing ~~a said~~ first software layer to generate a user ~~interface;~~ interface based on said Hypertext Markup Language document;

said first software layer receiving user input that specifies a change to configuration data stored in said network device;

in response to said user input, said first software layer transmitting a first message to a second software layer using Hypertext Transport Protocol, wherein said second software layer resides in said network device;

in response to said first message, said second software layer transmitting a second message to a third software layer using Simple Network Management Protocol, wherein said third software layer resides in said network device; and

in response to said second message, said third software layer changing said configuration data as specified by said user input.

72. (Currently Amended):

The network device of claim 71, wherein

said first software layer is a text-based interface layer to a combined text-based interface generator and hypertext transport protocol (HTTP) client, wherein

said second software layer is an HTTP server interface layer to a combined HTTP server and simple network management protocol (SNMP) manager, and wherein

said third software layer is an SNMP agent interface layer.

73. (Cancelled)

74. (Previously Presented):

The network device of claim 73, wherein causing said second software layer to send a Hypertext Markup Language document comprises:

receiving an object identifier for a Management Information Base object;

using said object identifier to search one or more files for entries associated with said Management Information Base object; and

for each entry associated with said Management Information Base object, generating Hypertext Markup Language text that, when decoded by an HTTP client, will cause the client to display information contained in said entry.

75. (Previously Presented):

The network device of claim 73, wherein generating Hypertext Markup Language text for an entry comprises:

transmitting a query to said third software layer to retrieve a current value associated with a second Management Information Base object, said second Management Information Base object being a component of said Management Information Base object that is identified in said entry;

receiving from said third software layer said current value associated with said second Management Information Base object; and

generating Hypertext Markup Language text that, when decoded by an HTTP client, causes the HTTP client to generate a display that identifies said second Management Information Base object and displays said current value of said second Management Information Base object.

76. (Previously Presented):

The network device of claim 75, wherein generating Hypertext Markup Language text for an entry further comprises generating an anchor that contains a second MIB object identifier, wherein said second MIB object identifier uniquely identifies said second MIB object.

77. (Previously Presented):

The network device of claim 76, wherein the code further causes the one or more processors to perform the following comprising:

said second software layer receiving from said first software layer said second MIB object identifier and a new value for said second MIB object in response to a user selecting said display that identifies said second MIB object; and

said second software layer transmitting command to said third software layer to cause said third software layer to update configuration data associated with said second MIB object to said new value.

78. (New):

A network device having one or more processing devices to implement code which when executed cause the one or more processors to perform the following comprising:

executing a first software layer to generate a user interface, wherein said first software layer is a text-based interface layer to a combined text-based interface generator and hypertext transport protocol (HTTP) client;

said first software layer receiving user input that specifies a change to configuration data stored in said network device;

in response to said user input, said first software layer transmitting a first message to a second software layer using Hypertext Transport Protocol, wherein said second software layer is an HTTP server interface layer to a combined HTTP server and simple network management protocol (SNMP) manager and resides in said network device;

in response to said first message, said second software layer transmitting a second message to a third software layer using Simple Network Management Protocol, wherein said third software layer is an SNMP agent interface layer and resides in said network device; and

in response to said second message, said third software layer changing said configuration data as specified by said user input.

79. (New):

The network device of claim 78, wherein the code further causes the one or more processors to perform the following comprising:

causing said second software layer to send a Hypertext Markup Language document to said first software layer; and

generating, by the first software layer, said user interface based on said Hypertext Markup Language document.